

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/31927

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B66B 7/04, 1/34

US CL : 187/292, 410, 346

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 187/292, 410, 346, 409

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,810,120 A (Jamieson et al.) 22 September 1998, whole document.	1-3, 9-12, 14, 15 and 17
X	US 5,864,102 A (Jamieson et al.) 26 January 1999, whole document.	1-3, 10, 11, 14 and 15
X	US 5,929,399 A (Jamieson et al.) 27 July 1999, whole document.	1-3, 10, 11, 14 and 15
A	US 6,338,396 B1 (Morishita) 15 January 2002, whole document.	1, 10 and 14
X	US 5,824,976 (Jamieson et al.) 20 October 1998, whole document.	1-3, 10, 11, 14 and 15



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

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"P" document published prior to the international filing date but later than the priority date claimed

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later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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"&"

document member of the same patent family

Date of the actual completion of the international search

14 June 2004 (14.06.2004)

Date of mailing of the international search report

30 JUN 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US

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